

HTS Spotlight Series

HTS Profile: Telenor Satellite Broadcasting A.S.

High throughput satellite capacity is making waves of opportunity for the European mobile maritime market.

Telenor Satellite Broadcasting A.S., a major European satellite operator, has selected iDirect's new Velocity® product line as the ground infrastructure solution for its new THOR 7 high throughput satellite (HTS). The new satellite will be equipped with a Ka-band HTS payload of up to nine Gbps of throughput across 25 spot beams. Using iDirect as the ground segment provider, THOR 7 will allow Telenor Satellite Broadcasting to increase its total coverage and provide more satellite capacity over the North Sea, Norwegian Sea, Mediterranean, Baltic Sea and the Middle East.

THOR 7 is expected to launch in the second half of 2014, but to understand the impact of this new satellite, we sat down with Jan Hetland, the Director Datacomms Systems at Telenor Satellite Broadcasting, to explain what to expect from THOR 7 and how it will benefit the European maritime shipping and offshore oil and gas segments.



Featuring

Jan Hetland

CTO, Network and Data Systems,
Telenor Satellite Broadcasting AS

Jan has close to 20 years of experience working for satellite technology companies. He joined TSBc in February 2008, and heads the Network and Data Systems group within the Technology Division. The group is responsible for teleport ground infrastructure design, procurement and commissioning.

What does THOR 7 feature that helps Telenor Satellite Broadcasting's efforts toward introducing an HTS program?

THOR 7 is our first HTS satellite and a strategic move for us as we continue our efforts to develop our HTS program. When THOR 7 launches next year it will provide both a conventional Ku-band DTH payload as well as the Ka-band HTS payload. The Ka-band HTS payload of THOR 7 will have on the order of 8-9 Gigabits/second of throughput, somewhat depending on remote antenna sizes and

available transmit power. The Ka-band payload of THOR 7 will also use 29.5-30.0 GHz of the frequency band for remote uplinking and 19.7 - 20.2 GHz for downlinking. Additional Ka-band spectrum will be used for specialized applications.

The Ka-band payload provides unique coverage over Europe and all associated maritime regions including North Sea, Norwegian Sea, English Channel and the Mediterranean. In addition it has some switchable spot beams that can provide coverage over the Red Sea, the Middle East, as well as the Atlantic Northwest, though not all at the same time.

What differentiates THOR 7 from other HTS offerings?

What makes our THOR 7 satellite unique is it will provide regional coverage and utilize relatively small spot beams that will provide unprecedented high-powered performance for maritime applications. It includes several switchable spot beams as well as a steerable spot beam. For the majority of the spot beams, the allocated transmission power can be adjusted to provide more power to the beams seeing the highest demand for service. Maritime users will typically use all of the fixed spot beams plus potentially the switchable beams. The steerable spot beam will be intended for fixed or semi-stationary users that stay within the beam.

What is THOR 7's delivery model?

We are partnering with Space Systems/Loral, who is currently manufacturing THOR 7 and Arianespace will launch the satellite on an Ariane 5 launcher from the Guiana Space Centre in French Guiana.

What industry markets are you serving and what benefits will HTS deliver to service providers and end users in these markets?

We have traditionally been a sizable supplier of Ku-band satellite capacity to the maritime user segment. THOR 7 will continue to build on this heritage and is primarily designed to serve the maritime mobility market.

Vessels in the mobility markets like offshore oil and gas and shipping are expected to increase production, cater to crew and keep operating costs down to a minimum, all while operating in more remote waters and travelling miles across different satellite beams. Crew on these vessels must have constant connectivity in these remote areas and be able to utilize the same broadband applications that are used on land such as accessing email, databases and Internet. Other applications that require a lot of bandwidth must also be used to increase productivity.

Once launched, the THOR 7 Ka-band payload will address these issues, delivering the highest performing satellite payload designed

for the maritime market. Its aggregate throughput is more than that of 5-6 conventional Ku-band satellites. Combined with a very favourable look angle over Pan-European waterways this translates to higher bit-rates and allows smaller antennas to be used on-board vessels. Also, with the iDirect Velocity platform's seamless spot beam handover feature users can enjoy uninterrupted pan-European coverage as if the coverage was a single wide Ku-band beam.

How will HTS benefit the overall satellite industry?

THOR 7's Ku-band wide beams are ideal for broadcasting purposes and for mobility applications serving low-density traffic regions. At a higher level, in virtually all other areas, data and Internet services will benefit from HTS satellite architectures, simply due to the much higher throughput levels these satellites will provide. This, in turn, lowers the cost of capacity in the sky and will eventually lower the cost of communication for end-users.

What are your future plans for HTS?

We plan to continue our efforts to provide higher throughput for our partners. We are currently involved in other future projects that could involve an HTS component, but these are in the early development stages.



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